

# Agenda

## TREE BOARD

### Regular meeting

9 a.m. Wednesday, June 21, 2023

Board Meeting Room of Town Hall Annex, 105 E. Corbin St.



**1. Call to order, roll call, and confirmation of quorum**

**2. Agenda changes and approval**

**3. Minutes review and approval**

Minutes from regular meeting on Mar. 15, 2023, and Apr. 19, 2023

**4. Discussion items**

- A. Review landscape plans and discuss proposed plantings for the future train station site  
(Guest: Jeff Christensen, Surface 678)

**5. Updates**

- A. Garden Club
- B. Invasive Removal Team
- C. Staff: recent tree removals, Comprehensive Sustainability Plan update, feasibility study updates

**6. Adjournment**

Interpreter services or special sound equipment for compliance with the American with Disabilities Act is available on request. If you are disabled and need assistance with reasonable accommodations, call the Town Clerk's Office at 919-296-9443 a minimum of one business day in advance of the meeting.

# Minutes

## TREE BOARD

Regular meeting

9 a.m. March 15, 2023

Board Meeting Room of Town Hall Annex, 105 E. Corbin St.



Present: Chair Casey Collins, Sharon Billings, Bridget Booher, Tim Logue, Linda Paynter, and Greg Yavelak

Absent: Mixon Nelson

Staff: Public Space and Sustainability Manager Stephanie Trueblood

### 1. Call to order, roll call and confirmation of quorum

Chair Casey Collins called the meeting to order at 9 a.m. Public Space and Sustainability Manager Stephanie Trueblood called the roll and confirmed the presence of a quorum.

### 2. Agenda changes and approval

There was none.

### 3. Minutes review and approval

Minutes from regular meetings on Jan. 18, 2023, and Feb. 15, 2023

Motion: Member Bridget Booher moved to approve both sets of minutes. Member Greg Yavelak seconded.

Vote: 6-0.

### 4. Discussion items

- A. Discussion of 2023 Bee City initiatives with Sarah Meadows of the Garden Club Bee City Subcommittee  
Trueblood explained that Meadows usually comes to the March Tree Board meeting to review initiatives with the board. Meadows had provided a list of plans in the agenda packet for National Pollinator Week 2023.

The board briefly reviewed the list.

Trueblood noted the Tree Board can have a table at any Last Fridays event. It was suggested to have a drawing opportunity where kids try to draw some native pollinators while looking at a poster of native pollinators.

- B. Planning for Earth Evening

Earth Evening was planned for 6 to 8 p.m. April 28 at the Farmer's Market Pavilion in River Park.

There was interest in offering and opportunity to make and take "seed bombs."

Collins would bring the materials for seed bombs. Member Sharon Billings would bring the game. Trueblood would request a spot close to the Hillsborough Garden Club.

### 5. Updates



A. Garden Club

Billings gave a brief update about the upcoming garden tour.

B. Invasive Removal Team

There was interest in a video to explain the work along Riverwalk.

A lot of fig buttercup had been removed from the Cornwallis Hills neighborhood.

A March 25 workday is organized in Gold Park for Creek Week.

C. Staff

Trueblood gave updates including:

- Comprehensive Sustainability Plan is on the website
- A water service line prevents Laura Juel from being able to plant trees on West King Street across from The Colonial Inn.
- A dying tree was removed from Riley Avenue.
- A damaged and diseased pine tree was removed from the Town Hall Campus
- A black gum was planted on Riverwalk (funded by the Pokemon group in memory of a member) and a white oak was planted at Town Hall Campus
- Creek Week activities

**6. Adjournment**

The meeting was adjourned at 10:40 a.m.

Respectfully submitted,



Stephanie Trueblood  
Public Space and Sustainability Manager  
Staff support to the Tree Board

Approved: June 21, 2023

# Minutes

## TREE BOARD

Regular meeting

9 a.m. April 19, 2023

Board Meeting Room of Town Hall Annex, 105 E. Corbin St.



Present: Chair Casey Collins, Sharon Billings, Bridget Booher, Tim Logue, Mixon Nelson, Linda Paynter, and Greg Yavelak

Staff: Public Space and Sustainability Manager Stephanie Trueblood

### 1. Call to order, roll call and confirmation of quorum

Chair Casey Collins called the meeting to order at 9 a.m. Public Space and Sustainability Manager Stephanie Trueblood called the roll and confirmed the presence of a quorum.

### 2. Agenda changes and approval

There was none.

### 3. Discussion items

#### A. Planning for Earth Evening

Collins and Member Linda Paynter planned to staff the table.

#### B. Discussion of 2023 Bee City initiatives

The board reviewed the write-up about the importance of trees for pollinators.

#### C. Video planning: How to plant a tree

Collins will take photographs.

### 4. Updates

#### A. Garden Club

Billings reminded the board of the upcoming Garden Club garden tour.

#### B. Invasive Removal Team

Work is continuing. It was noted that more it would be useful to explain to the public early next spring why an herbicide application is needed to remove fig buttercup.

#### C. Staff

Trueblood gave updates including:

- Turnip Patch Park trees — a neighbor is concerned about a tree, which may need to be trimmed
- Garden and planter plantings have taken place
- Comprehensive Sustainability Plan — latest version is on the website
- South Churton Street Multimodal Corridor Study is getting underway
- Ridgeway greenway feasibility study to be presented to town board soon.

The board expressed interest in seeing the train station plans at some point.

**5. Adjournment**

Motion: Booher moved to adjourn at 10:25 a.m. Collins seconded.

Vote: 7-0.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Stephanie Trueblood".

Stephanie Trueblood  
Public Space and Sustainability Manager  
Staff support to the Tree Board

Approved: June 21, 2023

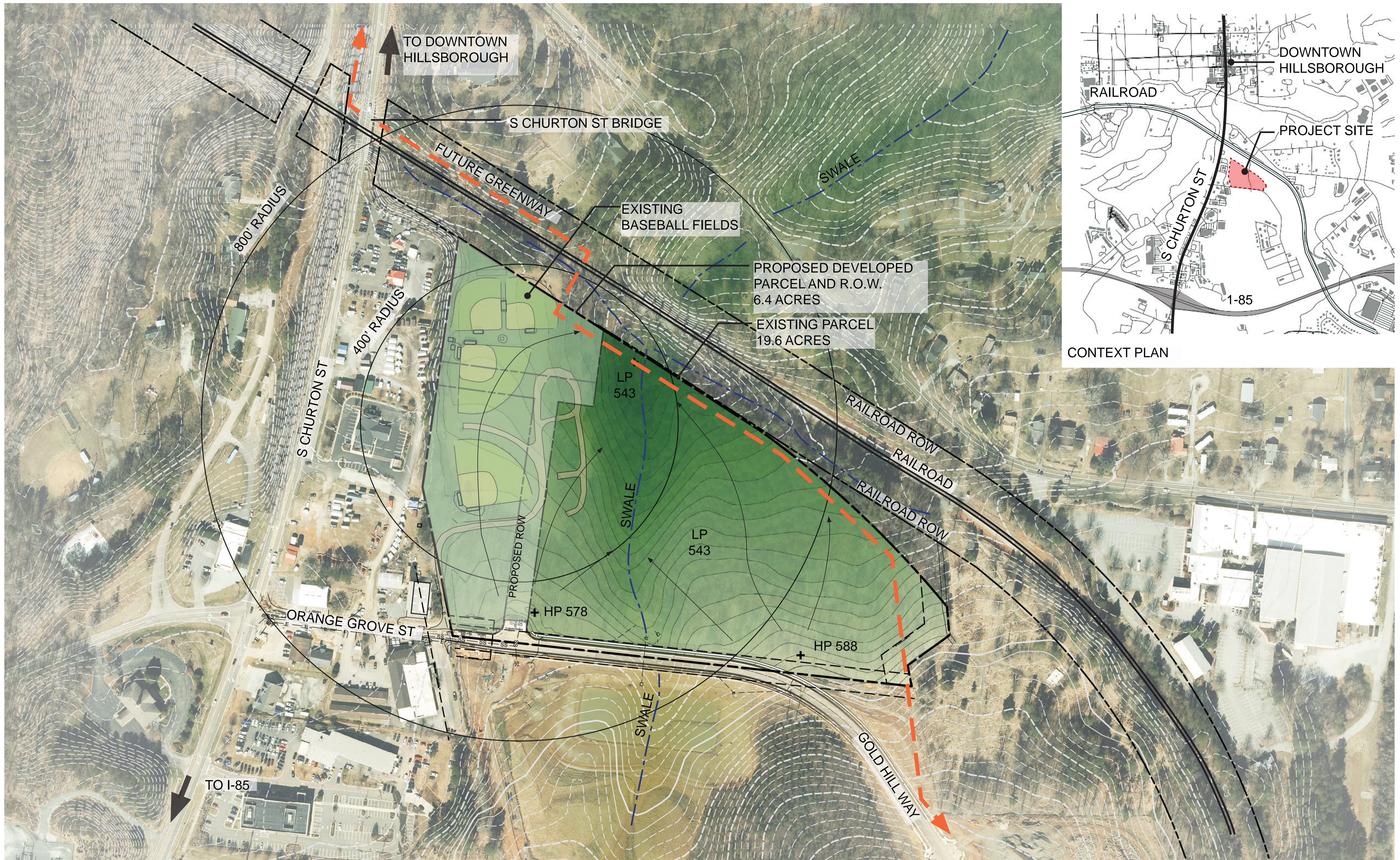
# HILLSBOROUGH TRAIN STATION PLANTING CONCEPTS

June 21, 2023

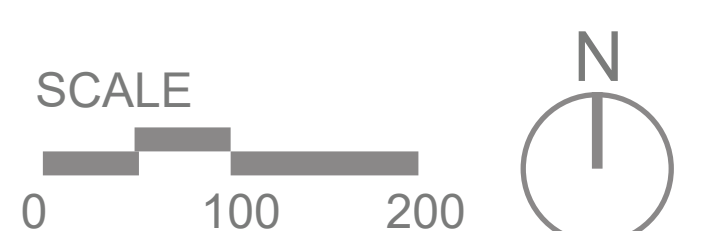
**CLEARSCAPES**  
ARCHITECTURE + ART

**Surface**





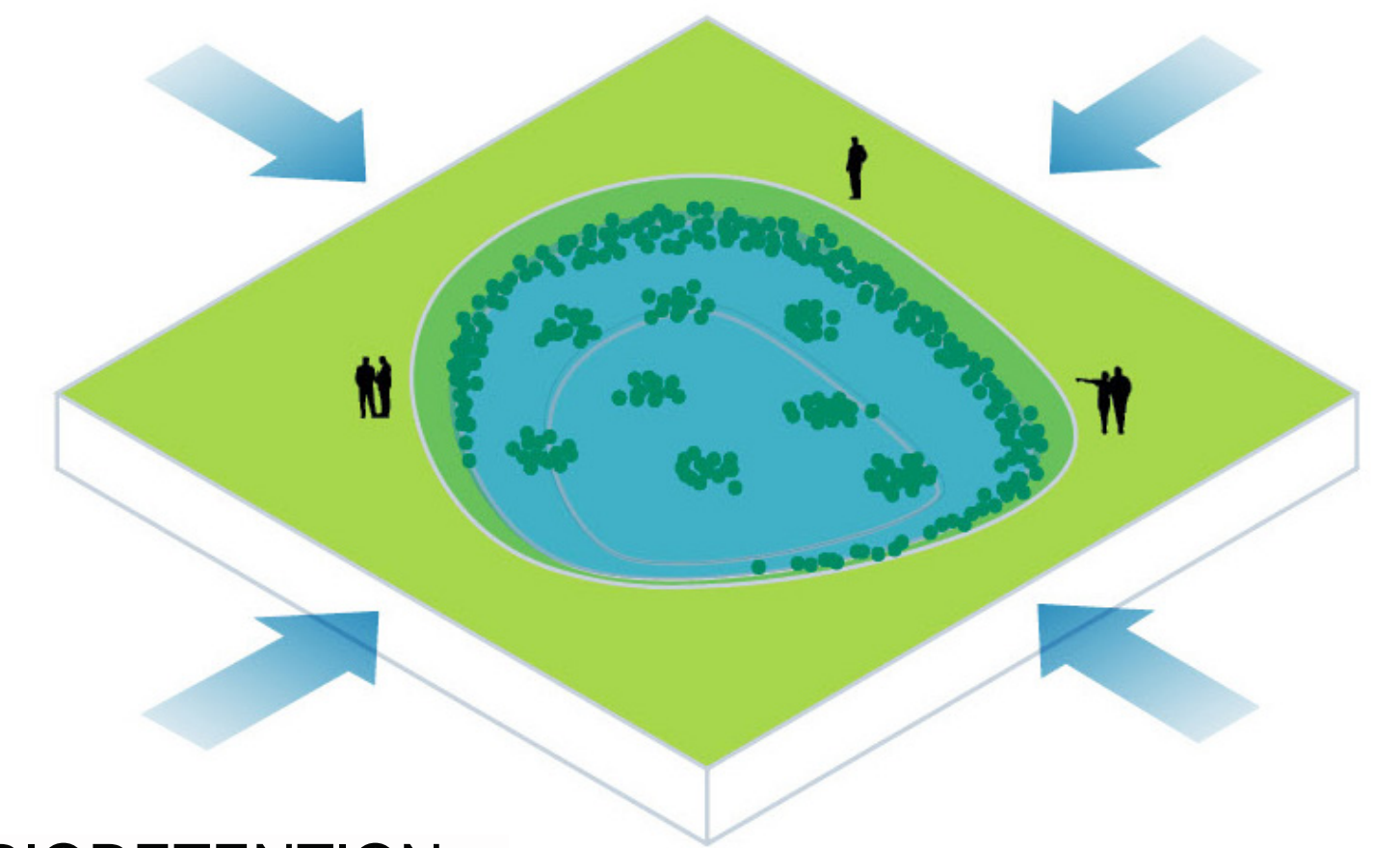
# SITE ANALYSIS



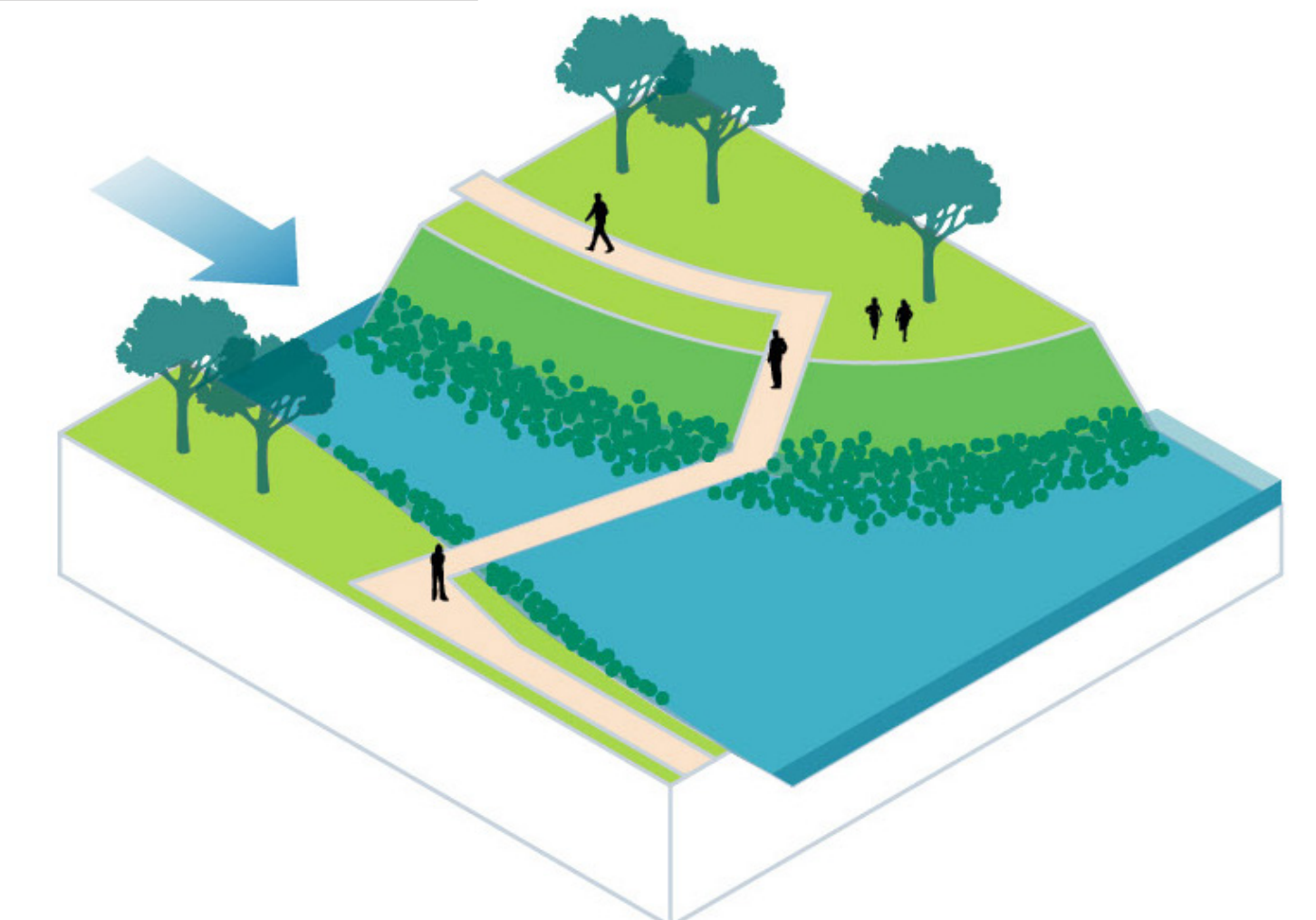




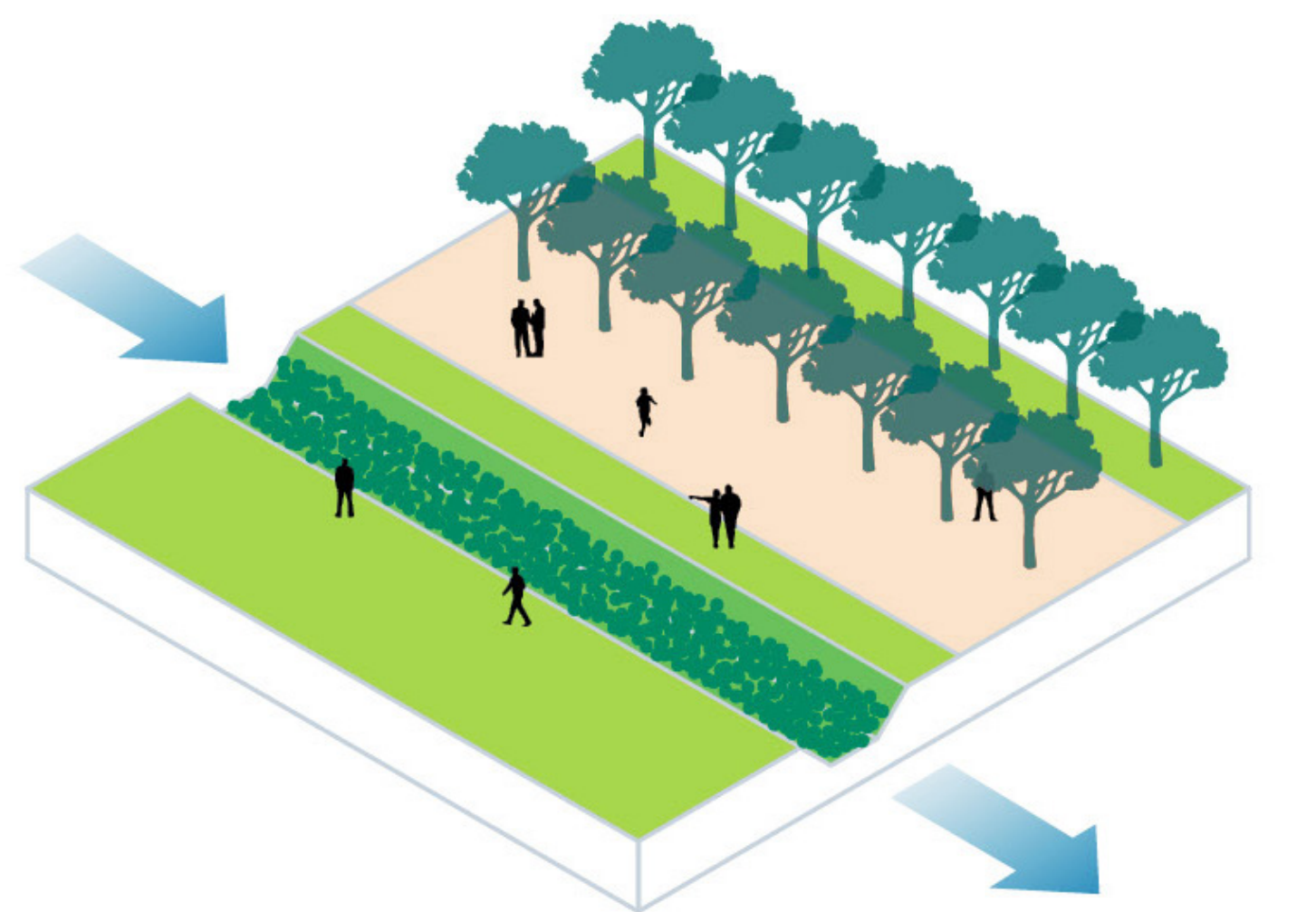




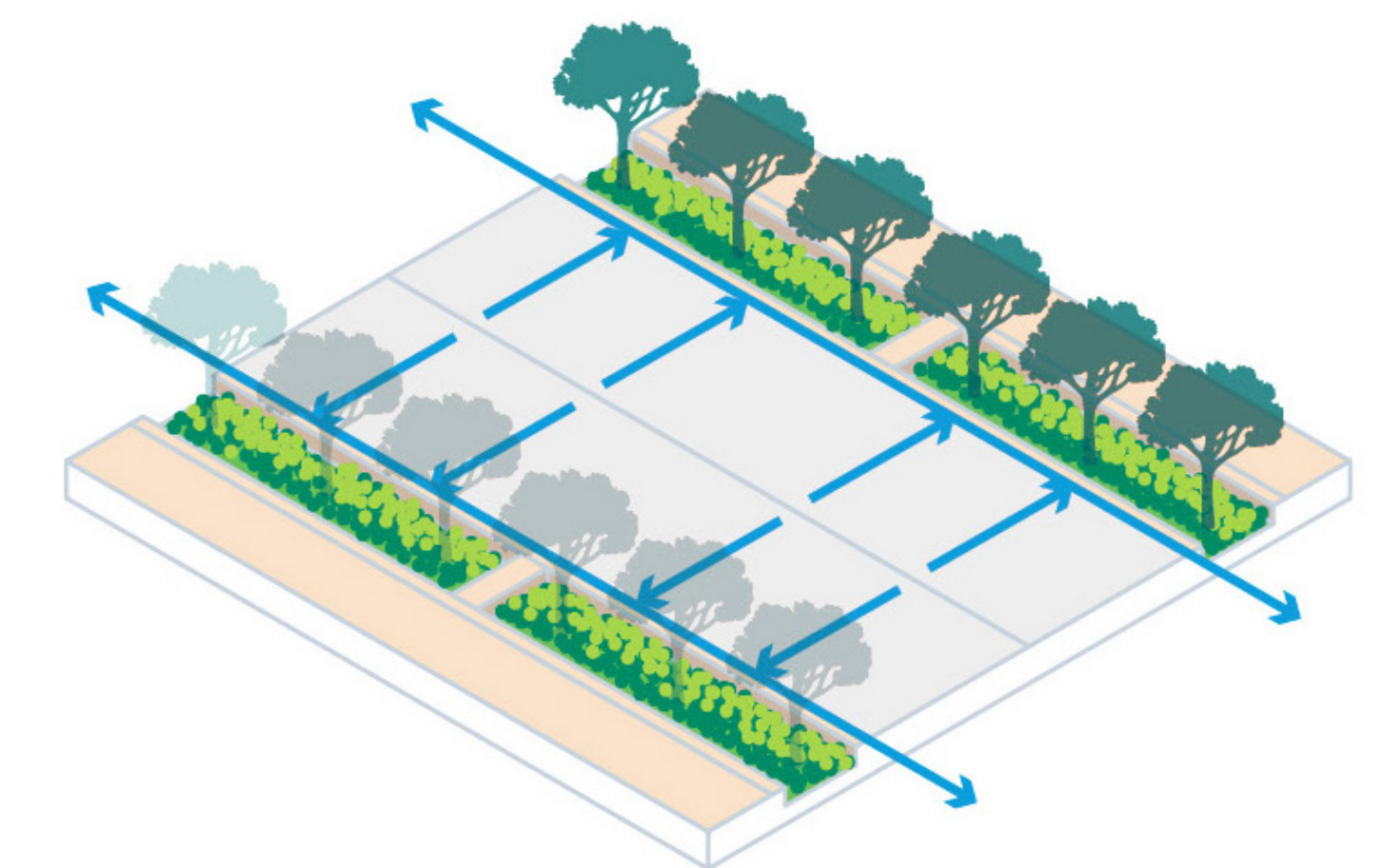
BIORETENTION



CONSTRUCTED WETLANDS

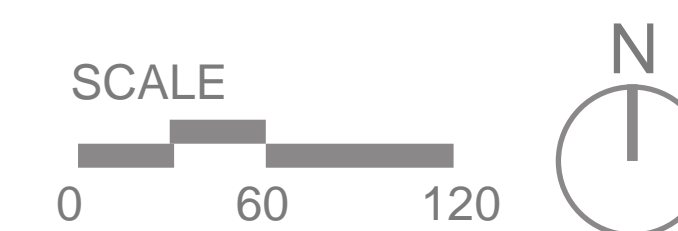


VEGETATED SWALE



GREEN STREET INFRASTRUCTURE

# STORMWATER MANAGEMENT



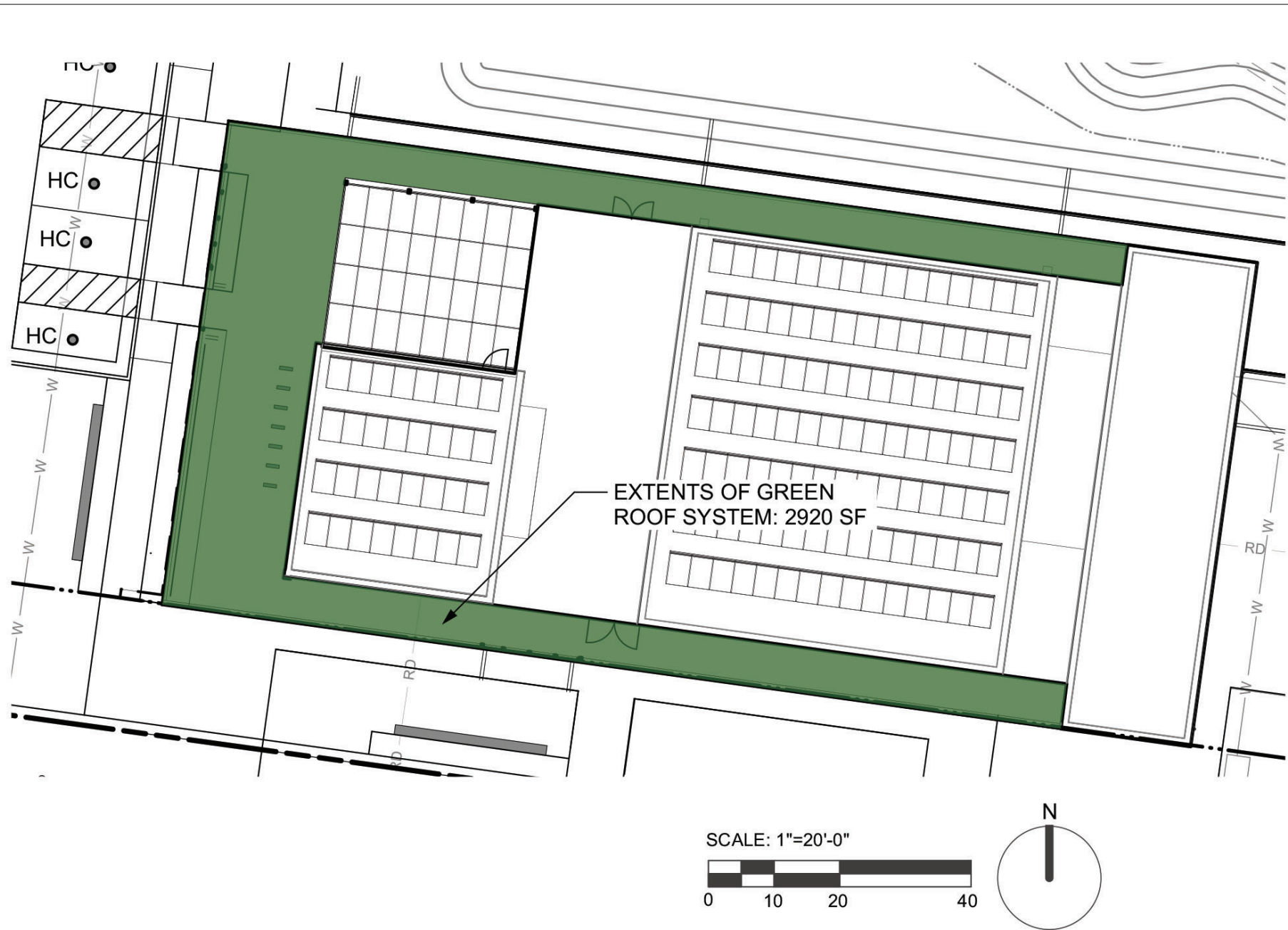


PLANTING PLAN



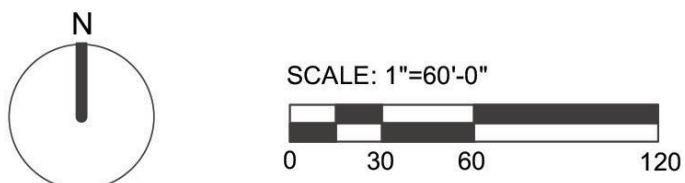
| PLANTING LEGEND |   |
|-----------------|---|
|                 | SEEDED MEADOW COMPOST BLANKETS  |
|                 | AREA: 8500 SF   |
|                 | ORNAMENTAL GRASS AND GROUNDCOVER  |
|                 | AREA: 6000 SF<br>SPACING: 12" O.C.<br>QUANTITY: 6000<br>INSTALL SIZE: 2" POT / 32 LINERS PER TRAY   |
|                 | CONVEYANCE SWALE ORNAMENTAL GRASSES   |
|                 | AREA: 9200 SF<br>SPACING: 18" O.C.<br>QUANTITY: 4050<br>INSTALL SIZE: 2" POT / 32 LINERS PER TRAY<br>SPECIES: PANICUM VIRGATUM<br>JUNCUS EFFUSUS  |
|                 | STORMWATER SCM ORNAMENTAL GRASSES AND WILDFLOWERS   |
|                 | AREA: 15400 SF<br>SPACING: 18" O.C.<br>QUANTITY: 6780<br>INSTALL SIZE: 2" POT / 32 LINERS PER TRAY<br>SPECIES: PANICUM VIRGATUM<br>JUNCUS EFFUSUS<br>ANDROPOGON TERNARIUS<br>ILEX VERTICILLATA  |
|                 | PROPERTY BOUNDARY BUFFER  |
|                 | SIZE: TYPE A3, 20' WIDTH<br>(5) SMALL TREES PER 100 FT<br>GROUND: SEEDED MEADOW COMPOST BLANKETS<br>QUANTITY: 71<br>INSTALL SIZE: 1.5" HT. B&B<br>SPECIES: PINUS TAEDA<br>MAGNOLIA VIRGINIANA<br>MYRICA CERIFERA<br>CERCIS CANADENSIS<br>CARPINUS CAROLINIANA<br>JUNIPERUS VIRGINIANA |
|                 | STREET TREES  |
|                 | SPACING: 40'-0" O.C.<br>QUANTITY: 46<br>INSTALL SIZE: 2.5" HT. B&B<br>SPECIES: QUERCUS LYRATA<br>TAXODIUM DISTICHUM<br>NYSSA SYLVATICA<br>QUERCUS COCCINEA<br>ACER BUERGERIANUM   |
|                 | PARKING LOT TREES   |
|                 | SPACING: 40'-0" O.C.<br>QUANTITY: 20<br>INSTALL SIZE: 2.5" HT. B&B<br>SPECIES: QUERCUS LYRATA<br>QUERCUS PHELLOS<br>TAXODIUM DISTICHUM<br>NYSSA SYLVATICA<br>QUERCUS COCCINEA<br>ACER BUERGERIANUM  |
|                 | ORNAMENTAL TREES  |
|                 | SPACING: 40'-0" O.C.<br>QUANTITY: 4<br>INSTALL SIZE: 3.5" HT. B&B<br>SPECIES: QUERCUS LYRATA<br>QUERCUS PHELLOS<br>TAXODIUM DISTICHUM<br>NYSSA SYLVATICA<br>BETULA NIGRA  |
|                 | EVERGREEN SCREENING SHRUBS  |
|                 | SPACING: 4'-0" O.C.<br>QUANTITY: 12<br>INSTALL SIZE: 24" HT. CONT.<br>SPECIES: MYRICA CERIFERA<br>ILEX VERTICILLATA<br>JUNIPERUS VIRGINIANA   |
|                 | LAWN SCM ACCESS: BERMUDA SOD  |

- SOIL SPECIFICATIONS**
- TYPE B TOPSOIL: EXISTING SUITABLE TOPSOIL FREE OF ROOTS, PLANTS, SOD, STONES, CLAY LUMPS AND OTHER EXTRANEUS MATERIALS. SUPPLEMENT WITH IMPORTED TOPSOIL WHERE EXISTING QUANTITIES ARE INSUFFICIENT. MIX WITH 1:10 RATIO ORGANIC SOIL AMENDMENTS.
  - PROVIDE 2" MULCH OVER LANDSCAPE BEDS NOT TO BE SEEDED.
  - IRRIGATION: CONTRACTOR SHALL PROVIDE TEMPORARY WATERING OF PLANTS FROM INSTALLATION THROUGH FINAL ACCEPTANCE, 1 YEAR MINIMUM. NO PERMANENT IRRIGATION SHALL BE PROVIDED OTHER THAN DRIP IRRIGATION FOR THE GREEN ROOF.
  - PLANT WARRANTY: 1 YEAR
  - PROVIDE EROSION CONTROL OR SIMILAR STABILIZATION FOR SEEDED SLOPES GREATER THAN 4:1.
  - TOPSOIL DEPTH: 4" NEW TOPSOIL PLUS 4" MIX OF NEW TOPSOIL INTO EXISTING SUBGRADE FOR MASS ORNAMENTAL GRASS AND GROUNDCOVER PLANTINGS.



PLANTING NOTES

- EXISTING UTILITIES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD PRIOR TO BEGINNING WORK. IDENTIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING AROUND EXISTING UTILITIES TO REMAIN.
- PLANT LIST IS PROVIDED FOR CONVENIENCE ONLY. IN THE CASE OF DISCREPANCIES BETWEEN THE PLAN AND PLANT LIST QUANTITIES, THE PLAN SHALL TAKE PRECEDENCE.
- AFTER THE SITE IS STABILIZED AND FREE OF SEDIMENTATION, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES, SILT, RIP RAP, AND TEMPORARY STONE STAGING AREAS FOR REPLACEMENT WITH PLANTING SOIL. PROVIDE PLANTING ACCORDING TO THE LANDSCAPE PLAN.
- TEMPORARY EROSION CONTROL SEED MUST BE FULLY REMOVED PRIOR TO PREPARATION OF PERMANENT SEED, SOD OR LANDSCAPE BEDS.
- UNLESS OTHERWISE NOTED IN THE PLANT LIST, OWNER SHALL OBTAIN AND INSTALL ONLY PLANT MATERIAL THAT IS GROWN ON ITS OWN ROOT - GRAFTED OR BUDDED PLANT MATERIAL WILL BE REJECTED.
- ALL TREES SHALL BE OBTAINED FROM THE NURSERY WITH EXPOSED ROOT CROWNS. B&B MATERIAL DELIVERED TO SITE WITH BURIED OR RECENTLY BURIED ROOT CROWNS WILL BE REJECTED.
- CONTRACTOR WILL NOTIFY LANDSCAPE ARCHITECT OF PLANT SUBSTITUTIONS IN ANY MEASUREMENT OR SPECIES INDICATED. SEE SPECIFICATIONS FOR FULL NOTIFICATION REQUIREMENTS.
- CONTRACTOR SHALL STAKE ALL PLANT LOCATIONS IN THE FIELD. OBTAIN APPROVAL FROM LANDSCAPE ARCHITECT PRIOR TO STARTING PLANT INSTALLATIONS
- DO NOT PLANT IN STORM WATER CONVEYANCE SWALES OR PROVIDE FINE GRADING THAT DISRUPTS FLOW OR CHANGES LONGITUDINAL SLOPES.
- PLANT THE OUTER EDGES OF EACH PLANTING GROUP FOLLOWING THE BED OUTLINE ACCORDING TO THE PLAN. ONCE A SATISFACTORY MATCHED OUTER SHAPE IS OBTAINED, FILL THE CENTER OF EACH AREA WITH PLANTS ACCORDING TO THE PLAN AND SPACING NOTES.
- THE PLANTING LAYOUT WITHIN PLANTING BEDS SHOULD BE SHIFTED TO MINIMIZE CONFLICTS WITH EXISTING TREE ROOTS AND OTHER STRUCTURES.
- DISTURBED EARTH AREAS BEYOND PROJECT LIMITS THAT ARE DIRECTLY CAUSED BY CONTRACTOR MEANS AND METHODS SHALL BE RESTORED WITH FESCUE SOD UNLESS OTHERWISE NOTED.



**CLEARSCAPES**  
ARCHITECTURE • ART  
http://www.clearscapes.com/  
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Raleigh, NC 27601  
(919) 821-2775  
(919) 821-0804 Fax  
artarc@clearscapes.com

CONSULTANTS

Landscape

**Surface 678**  
www.surface678.com  
215 Morris Street, Suite 150  
Durham, NC  
919.419.1199

Structural

**Lysaght & Associates**  
www.lysaghtassociates.com  
120 St Marys St  
Raleigh, NC  
919.833.0495

MEP Engineer

**Sud Associates, P.A.**  
www.sudassociates.com  
1813 Chapel Hill Rd.  
Durham, NC  
919.493.5277

Civil Engineer

**Ballentine Associates, P.A.**  
www.bapa.eng.pro  
122 Providence Rd., Eastowne Office Park  
Chapel Hill, NC  
919.929.0481

**Benesch Engineering**  
www.benesch.com  
8000 Regency Pkwy Ste. 175  
Cary, NC 27518  
984.275.2490

SEALS

NOT FOR CONSTRUCTION

SCHEMATIC DESIGN  
03.13.2023

PROJECT

**HILLSBOROUGH  
TRAIN STATION**  
255 ORANGE GROVE RD, HILLSBOROUGH,  
NC

REVISIONS

| No. | Description | Date |
|-----|-------------|------|
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PROJECT DATA

DATE: 03.13.2023  
DRAWN: JJC  
CHECKED: JJC  
PROJECT NO: 2022\_0100  
PRINTING: SCHEMATIC DESIGN

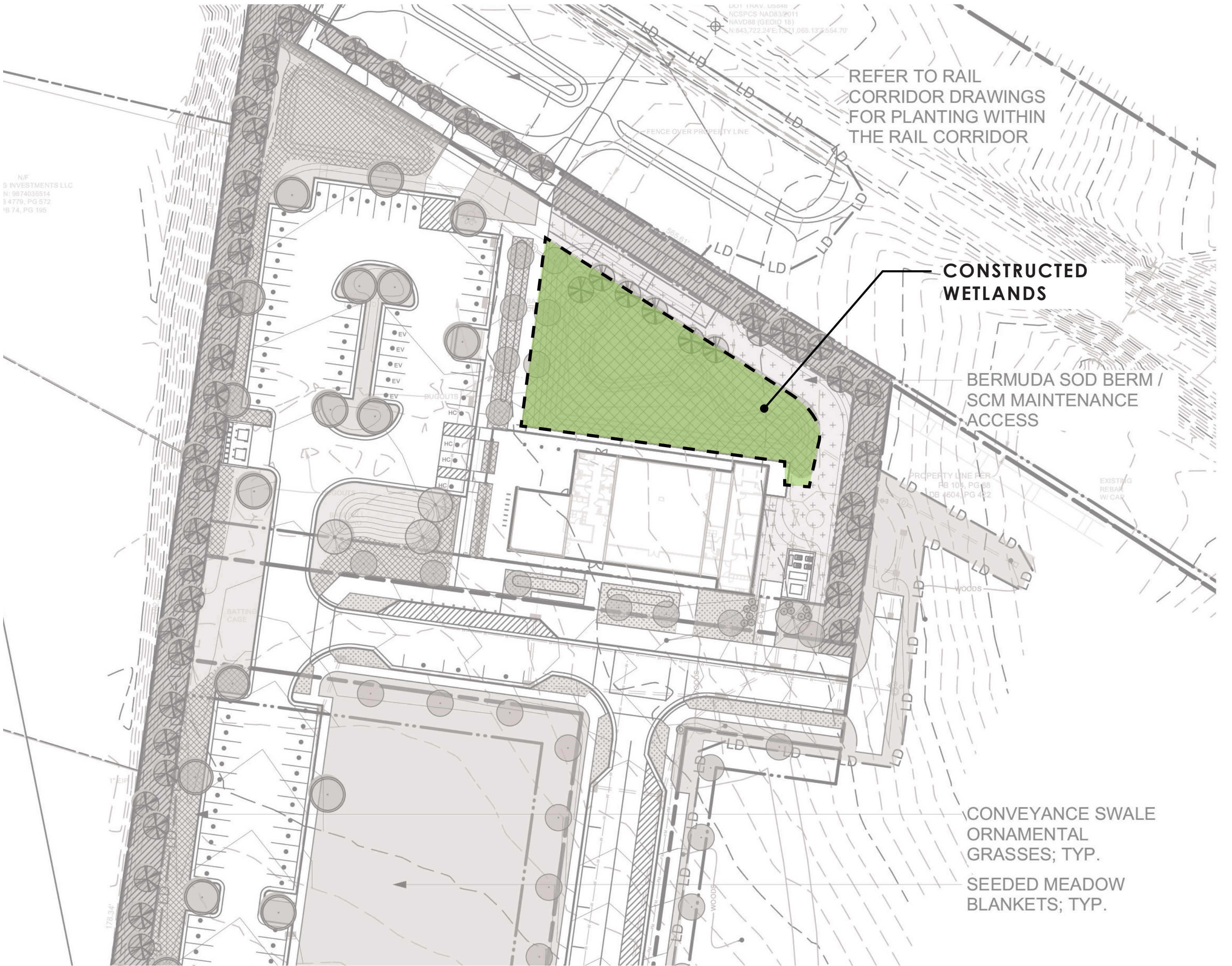
SHEET DATA

**PLANTING PLAN**

SHEET NO.

**L161**





CONSTRUCTED WETLANDS

PERENNIALS



FOXGLOVE BEARDTONGUE  
PENSTEMON DIGITALIS  
Bloom Time: April to June



GOLDENROD  
SOLIDAGO SPP.  
Bloom Time: July to September



SWAMP MILKWEED  
AESCLEPIAS INCARNATA  
Bloom Time: July to August

AQUATIC SHELF ORNAMENTAL GRASSES



SOFT RUSH  
JUNCUS EFFUSUS  
Bloom Time: June to August



SWITCHGRASS  
PANICUM VIRGATUM  
Fall Color



TUSsock SEDGE  
CAREX STRICTA

DEEP POOL PLANTINGS



SWEETFLAG  
IRIS VIRGINICA

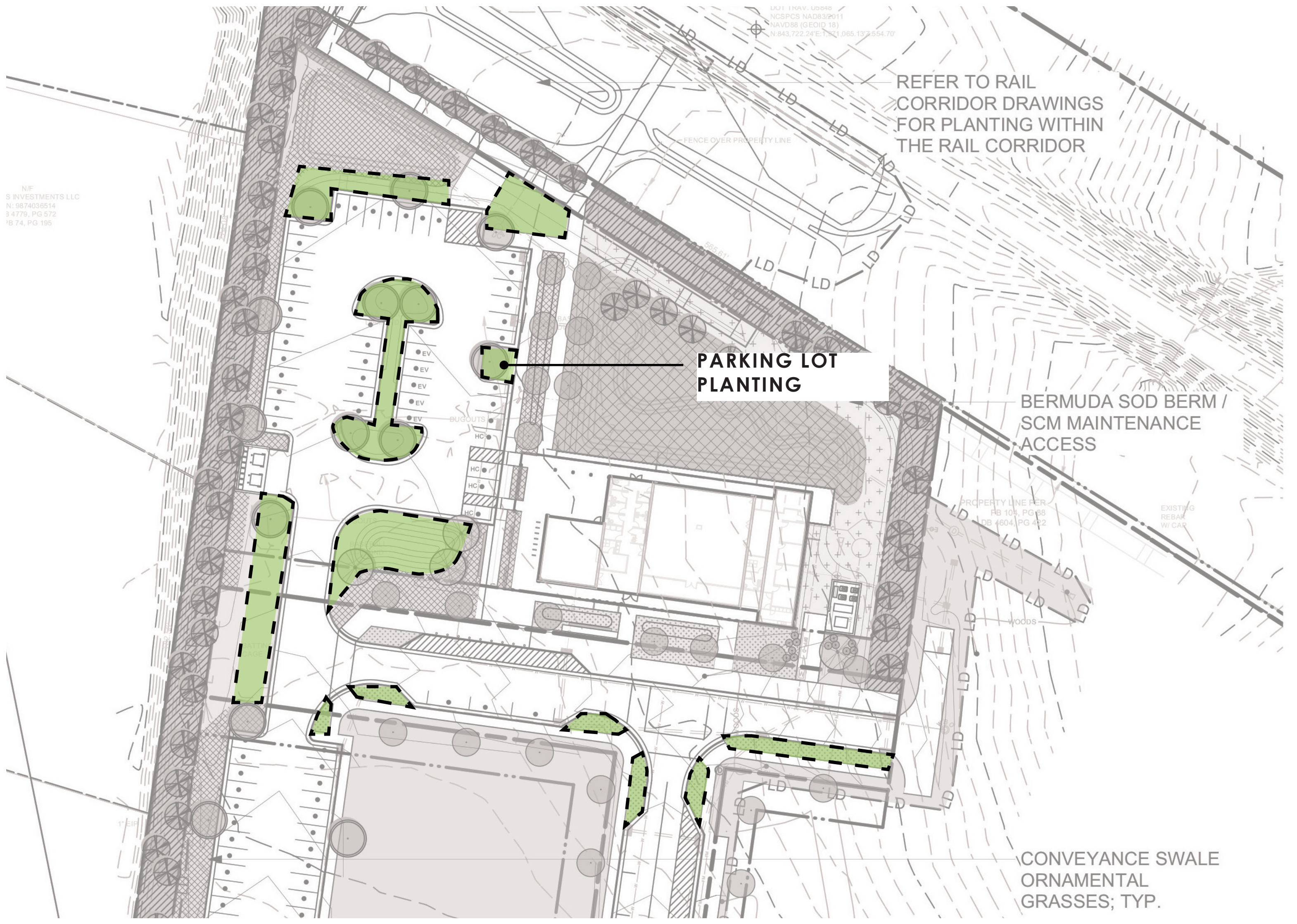


YELLOW POND LILLY  
NUPHAR LUTEA



SQUARESTEM SPIKERUSH  
ELECCHARIS QUADRANGULATA





PARKING LOT PLANTING



CANOPY TREES



BALDCYPRESS  
TAXODIUM DISTICHUM



BLACK GUM  
NYSSA SYLVATICA



QUERCUS COCCINEA  
SCARLET OAK

ORNAMENTAL GRASSES  
AND WILDFLOWERS



ERAGROSTIS SPECTABILIS  
PURPLE LOVEGRASS



COREOPSIS TINCTORIA  
PLAINS COREOPSIS



AESCLEPIAS TUBEROSA  
BUTTERFLYWEED





BUFFERS AND  
REFORESTATION

PIONEER TREES



LOBLOLLY PINE  
PINUS TAEDA



WILLOW OAK  
QUERCUS PHELLOS  
NUTTALL OAK  
QUERCUS NUTTALLII



NUTTALL OAK  
QUERCUS NUTTALLII

ORNAMENTAL GRASSES



FOXGLOVE BEARDTONGUE  
PENSTEMON DIGITALIS  
Bloom Time: April to June



LITTLE BLUESTEM  
SCHIZACHYRIUM SCOPARIUM



SWITCHGRASS  
PANICUM VIRGATUM



ANDROPOGON TERNARIUS  
BROOMSEDGE

SHRUBS AND UNDERSTORY TREES



GUARA  
OENOTHERA LINDHEIMERI  
Bloom Time: May to September



EASTERN REDCEDAR  
JUNIPERUS VIRGINIANA



WINTERBERRY  
ILEX VERTICILLATA

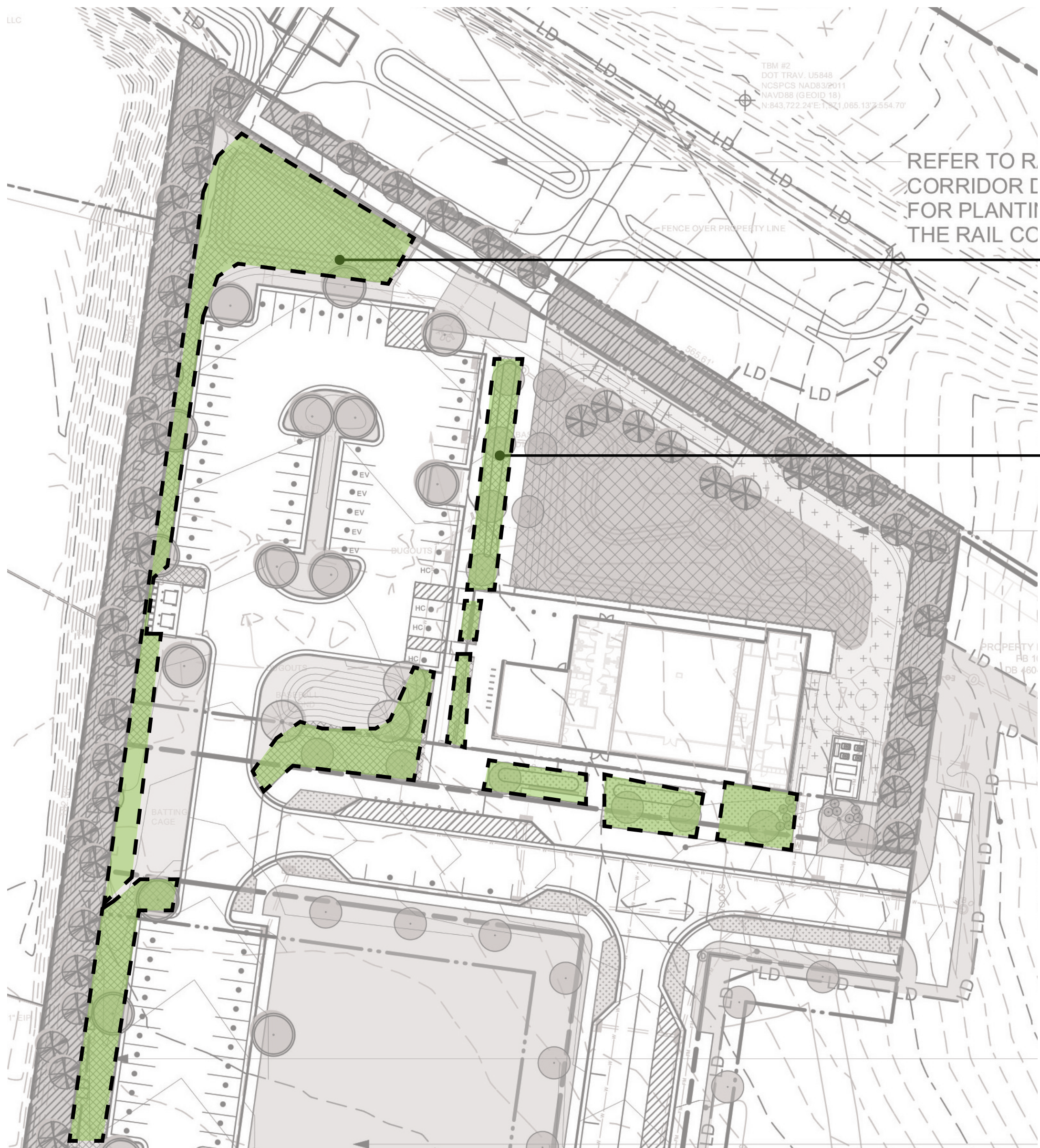


EASTERN REDBUD  
CERCIS CANADENSIS



BUFFERS AND REFORESTATION





BIORETENTION

OVERLAND SWALES

#### CANOPY TREES



RIVER BIRCH  
BETULA NIGRA 'DURAHEAT'



POND CYPRESS  
TAXODIUM ASCENDENS



WINTERBERRY  
ILEX VERTICILLATA

#### ORNAMENTAL GRASSES



SOFT RUSH  
JUNCUS EFFUSUS



SWITCHGRASS  
PANICUM VIRGATUM



ANDROPOGON TERNARIUS  
BROOMSEDGE



BIORETENTION AND OVERLAND SWALES





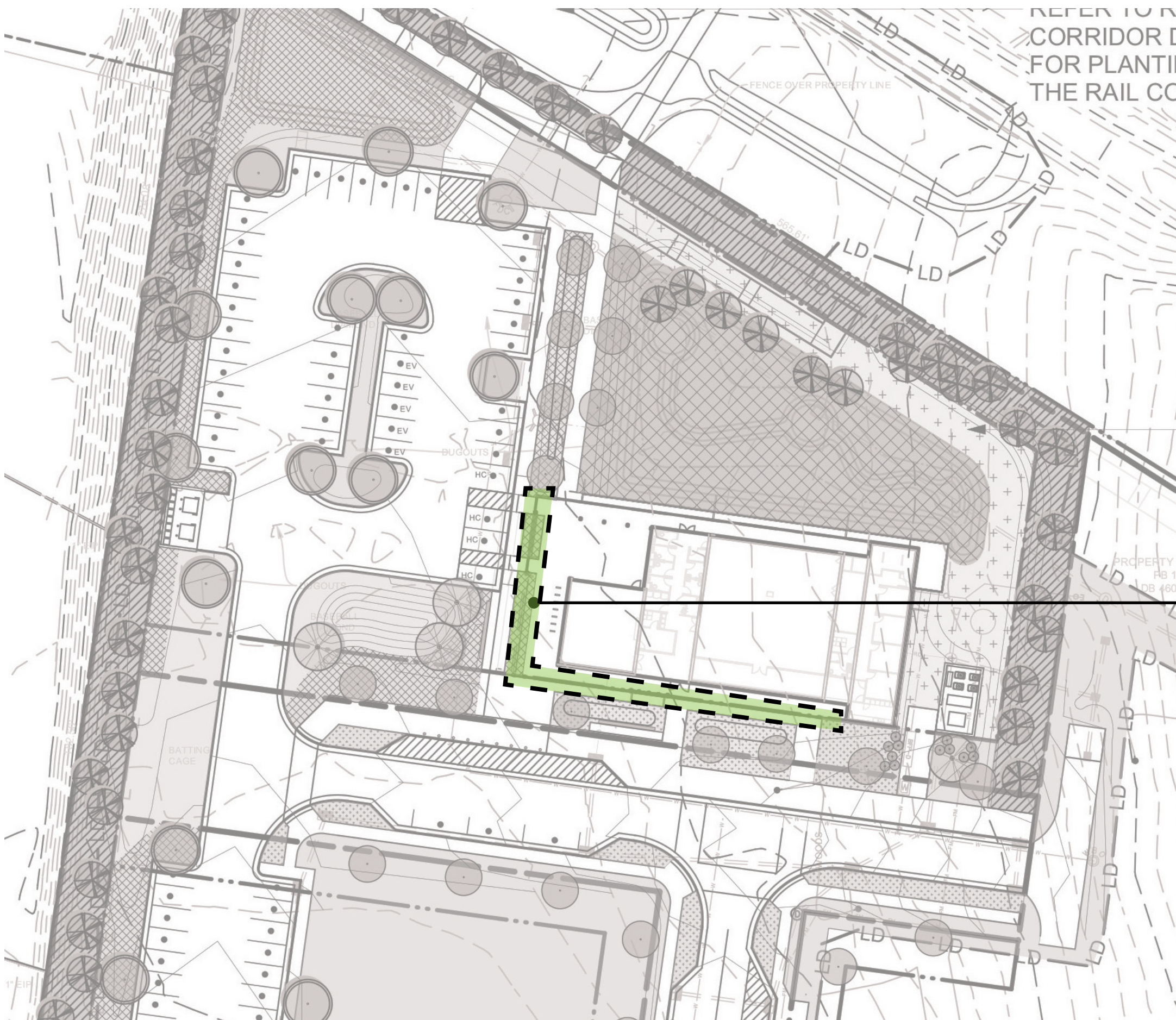
CROSSVINE  
BIGNONIA CAPREOLATA



TRUMPET VINE  
LONICERA SEMPERVIRENS



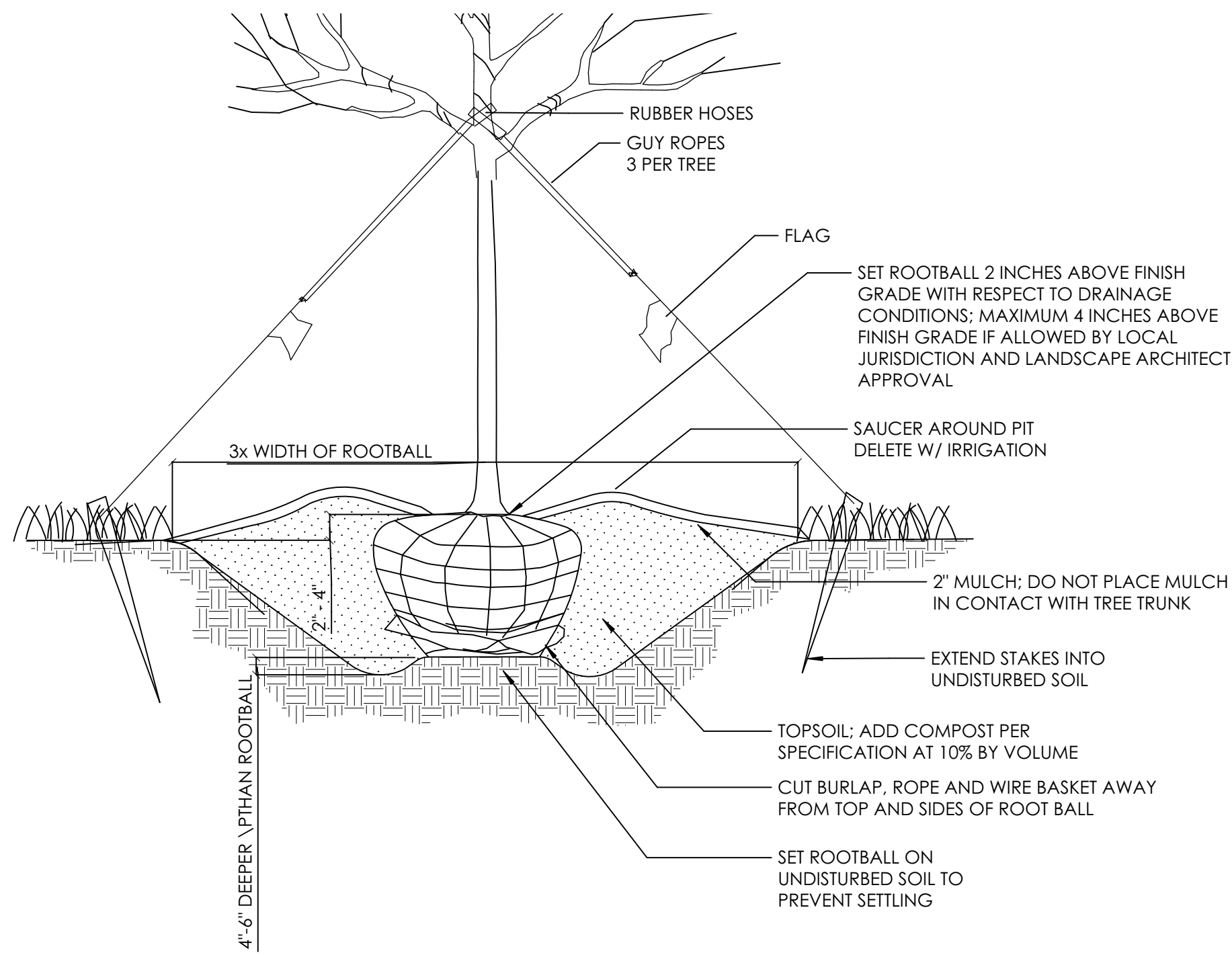
CREEPING PHLOX  
 PHLOX STOLONIFERA



- VINES

## NATIVE VINES





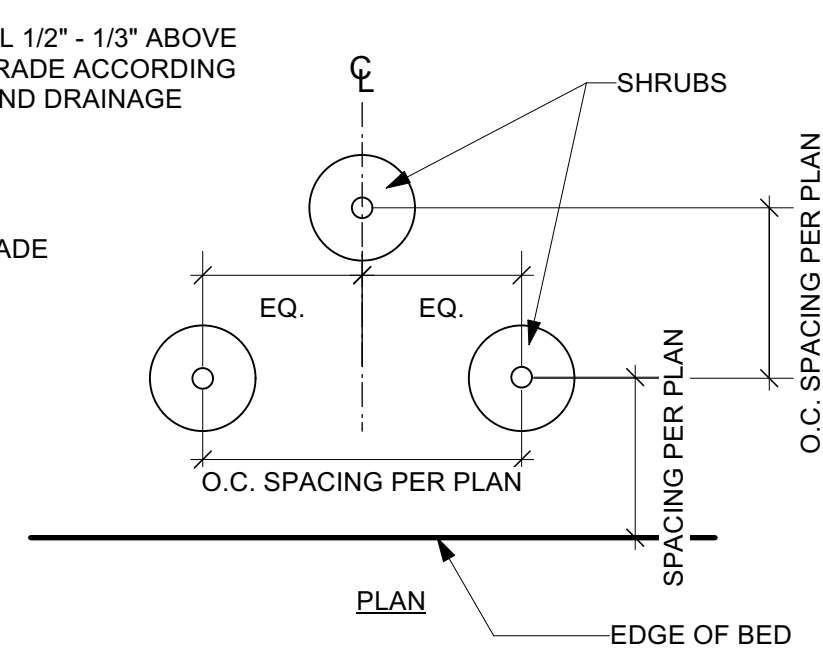
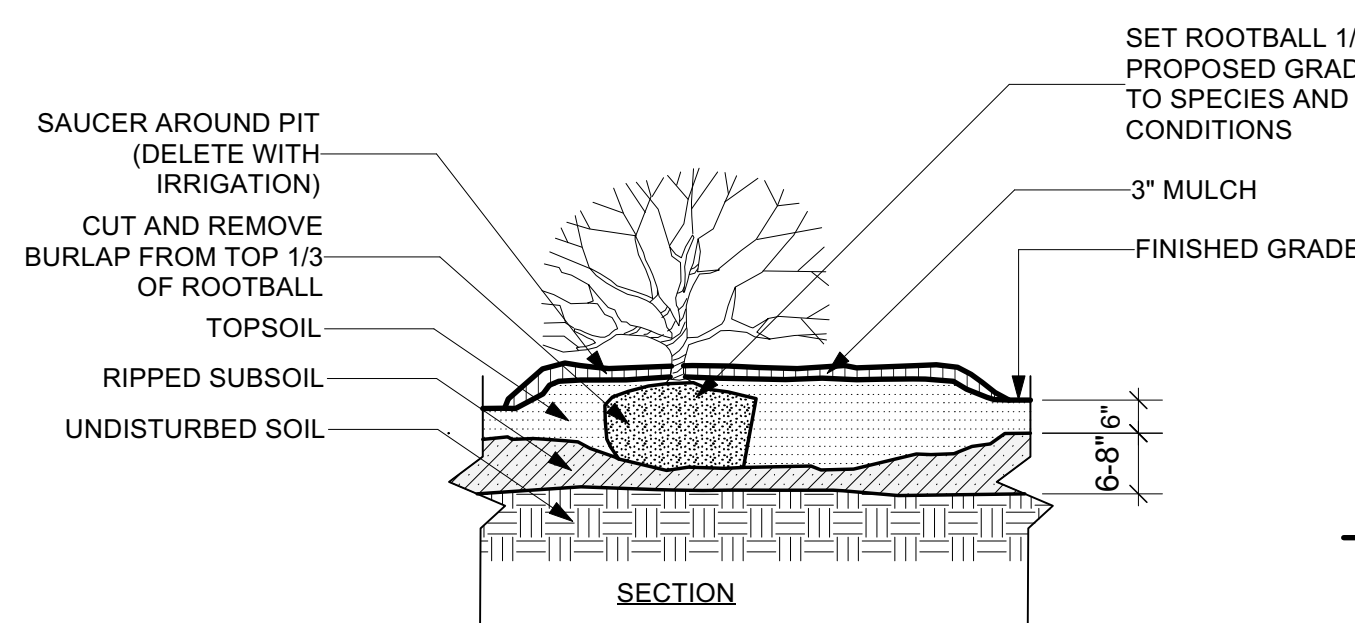
D1 RAISED TREE PLANTING

NOTE:  
1. CONTRACTOR SHALL PROVIDE SAMPLE TREE PLANTING FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF REMAINING TREES.  
2. PER SPECIFICATIONS, CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IN WRITING OF ENVIRONMENTAL OR DETRIMENTAL SITE CONDITIONS AFFECTING THE SURVIVAL OF PROPOSED PLANT MATERIAL PRIOR TO INSTALLATION OF PLANT MATERIAL. PROCEEDING WITH PLANT INSTALLATIONS AT THE DETRIMENT OF PLANT SURVIVABILITY WITHOUT NOTIFYING LANDSCAPE ARCHITECT OF HARMFUL SITE CONDITIONS MAY RESULT IN REJECTION OF PLANT MATERIAL AT THE DISCRETION OF LANDSCAPE ARCHITECT WITH NO COST REPLACEMENT BY CONTRACTOR.

SCALE: NTS

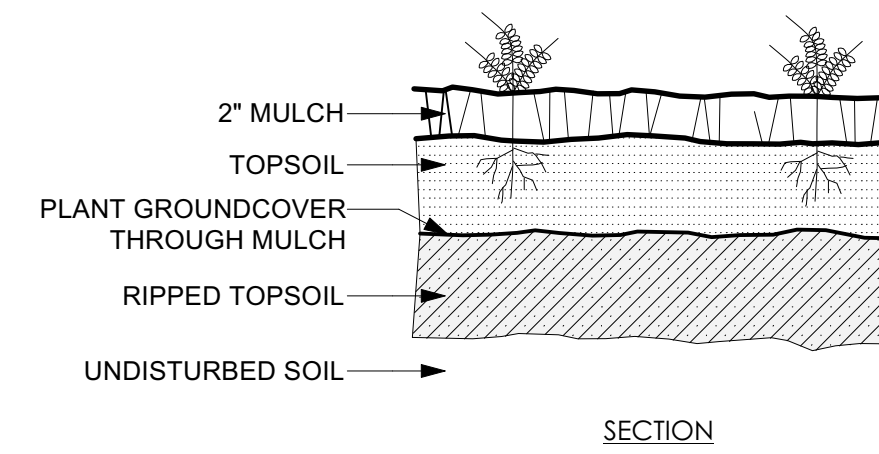
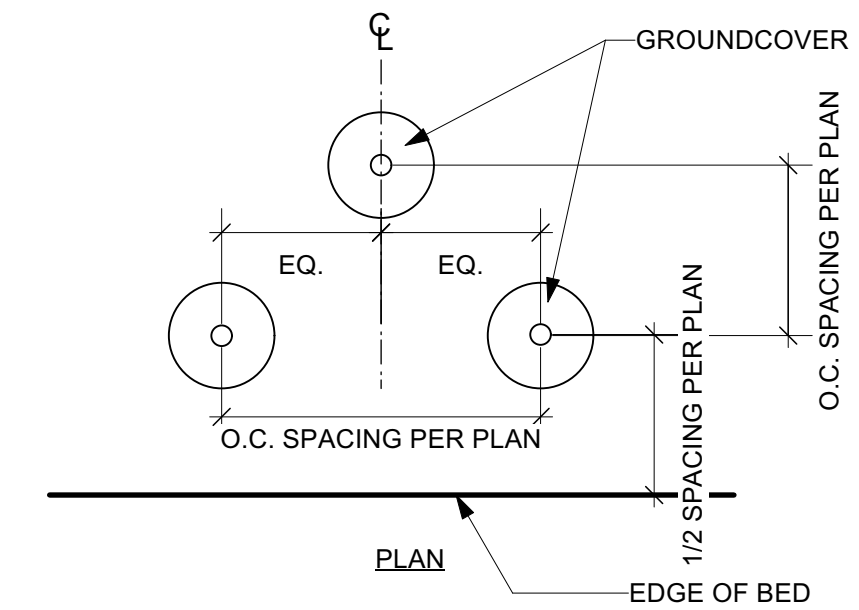
C4 BIORETENTION PLANTING DETAL

SCALE: NTS



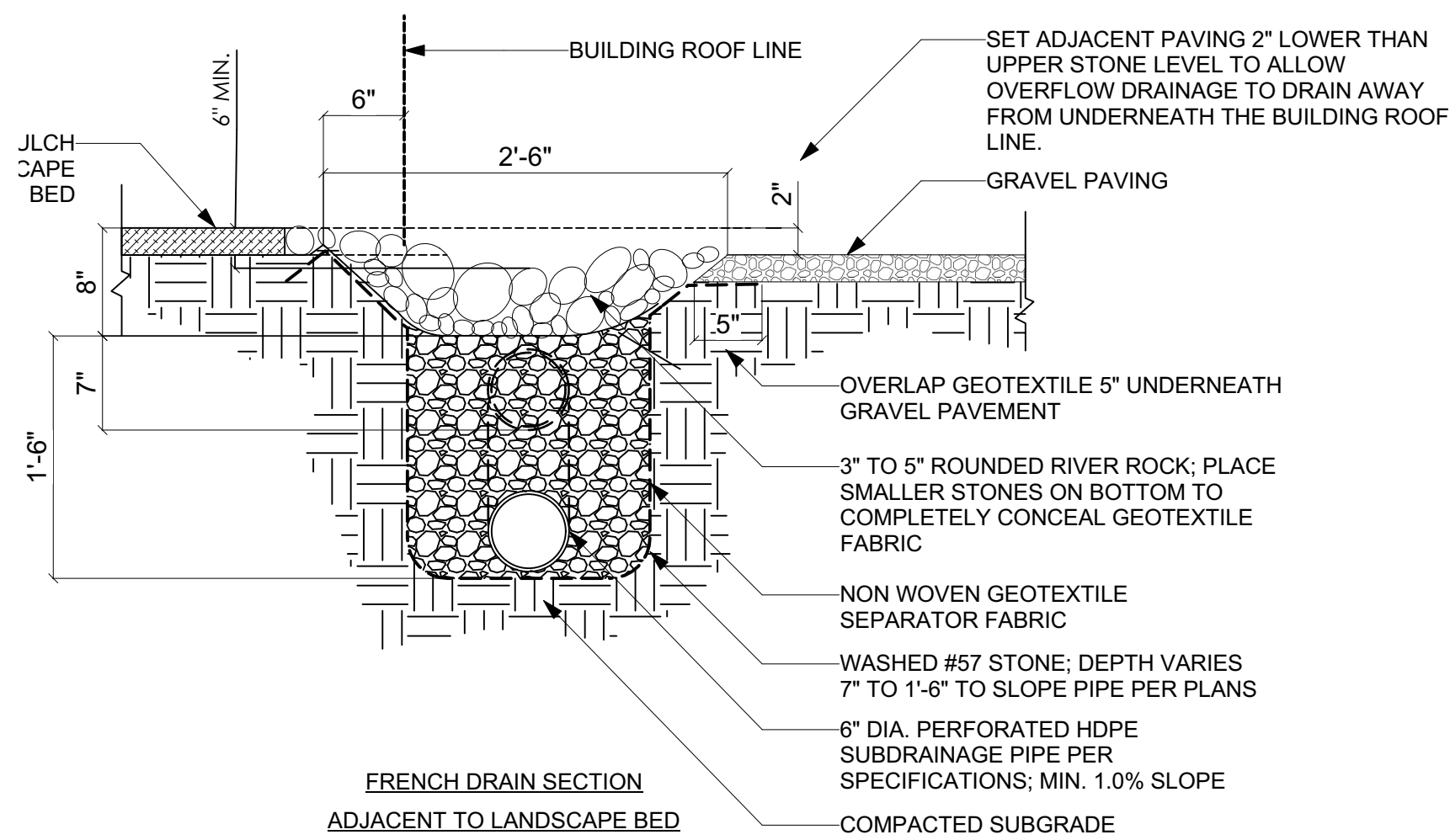
D4 RAISED SHRUB PLANTING

SCALE: NTS



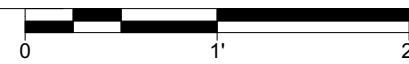
B1 GROUNDCOVER PLANTING

SCALE: NTS



B1 STONE FRENCH DRAIN

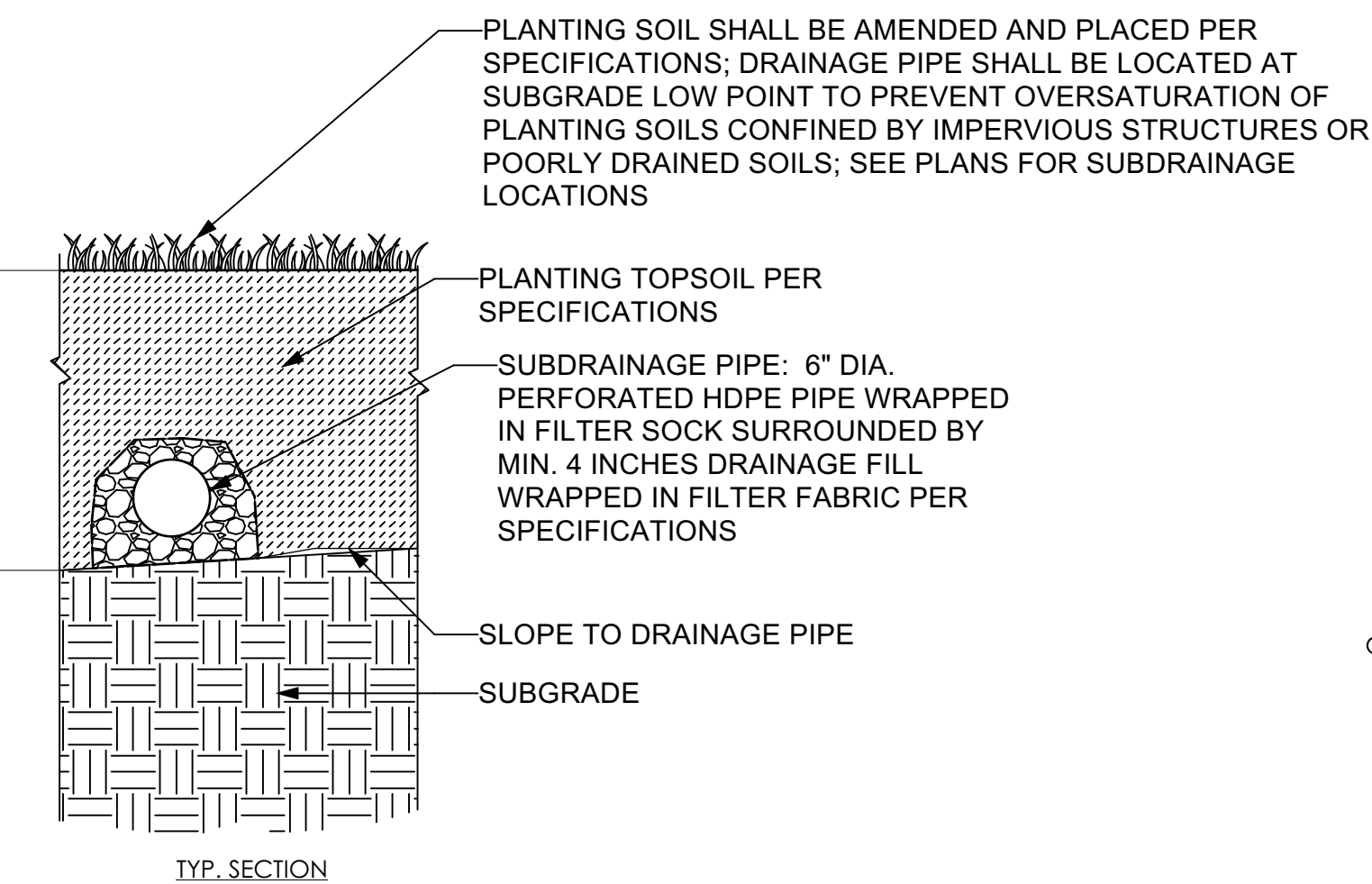
1"=1'-0"



B3 STANDING CURB DETAIL

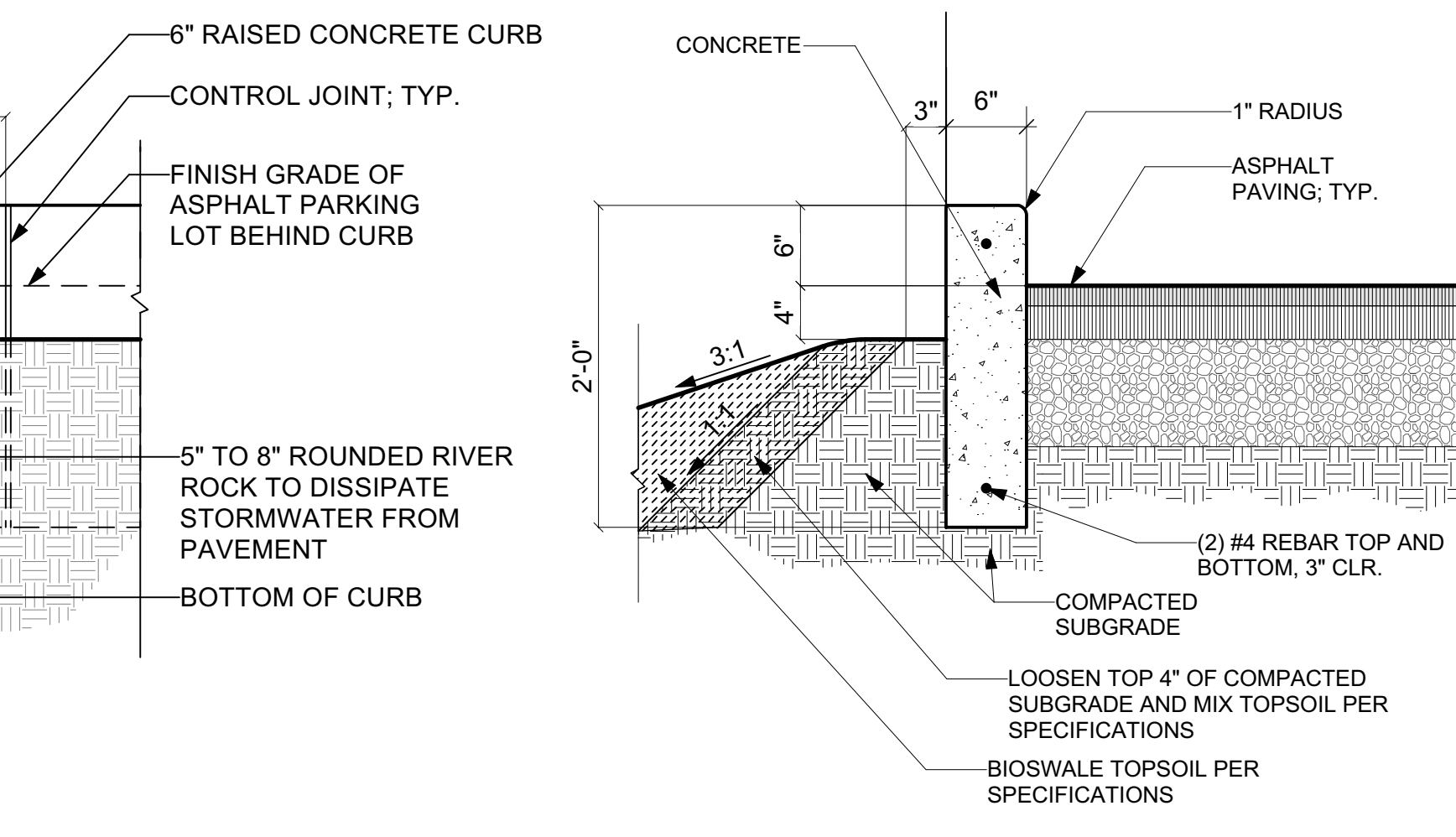
ELEVATION

1"=1'-0"

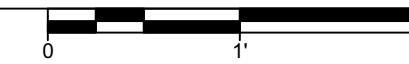


A2 SUBDRAINAGE PIPE FOR LANDSCAPE BED DRAINAGE

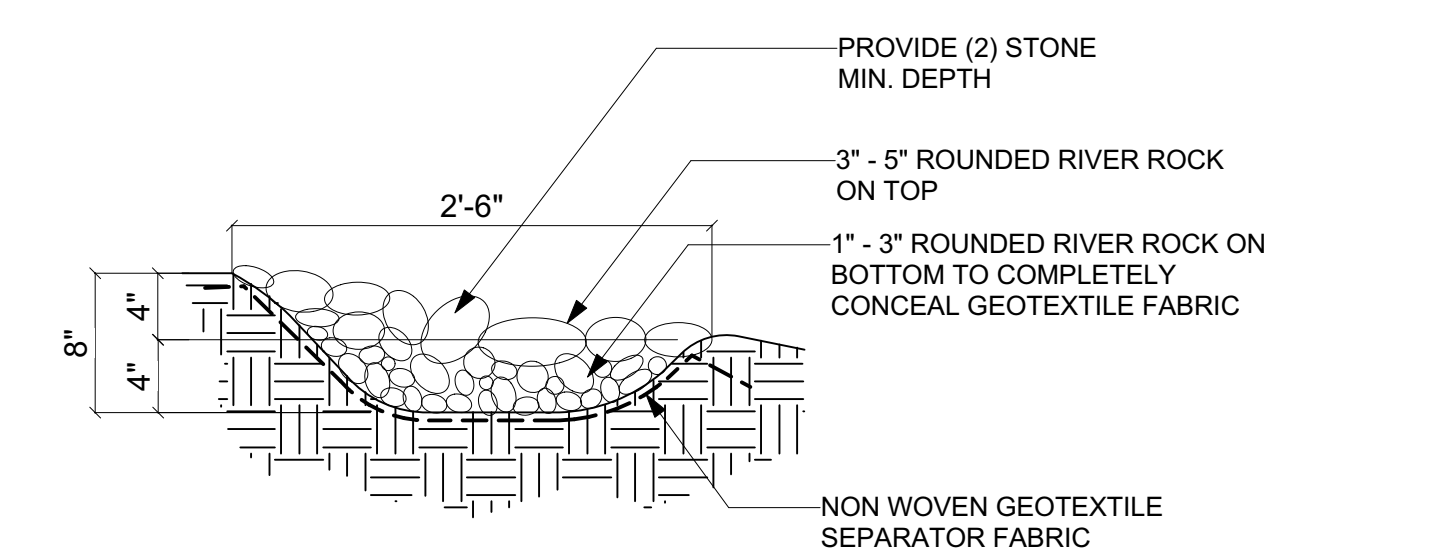
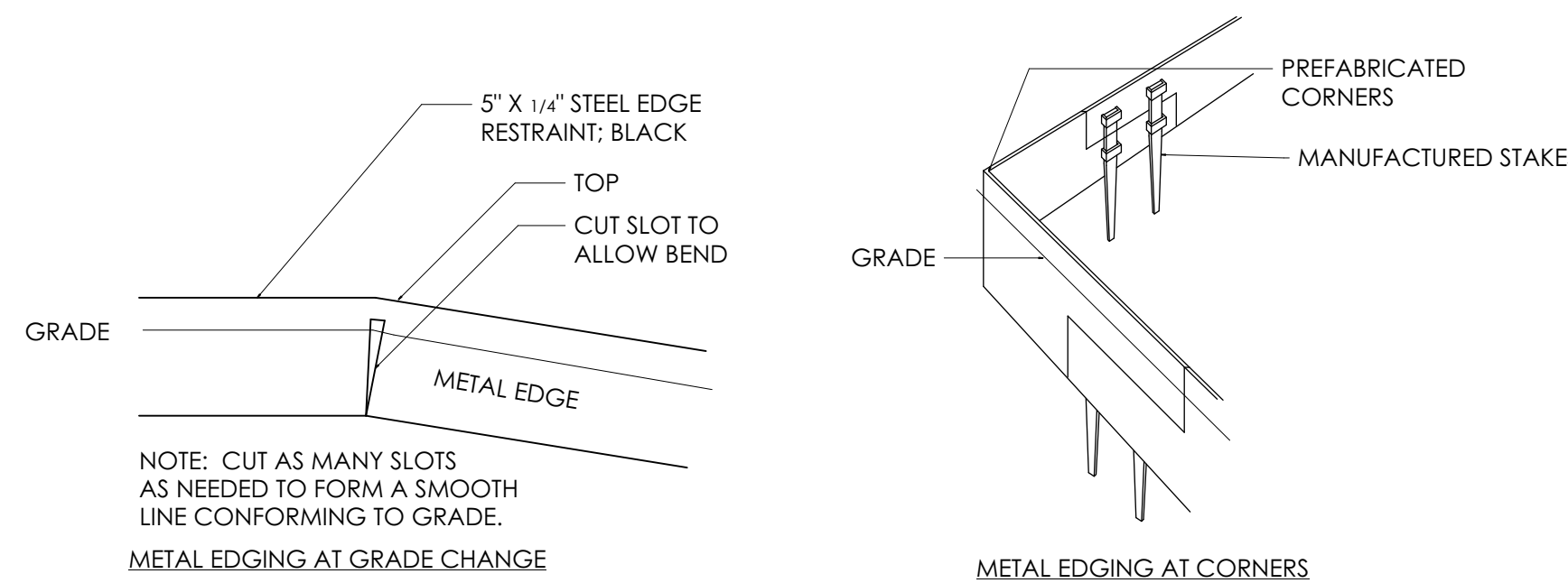
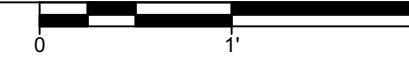
NOTE:  
1. SOLID PIPE SHALL BE USED BETWEEN PLANT BEDS AND STORM SYSTEM CONNECTIONS PER CIVIL DRAWINGS.



SECTION



A4 METAL EDGING



A1 STONE DISSIPATOR FOR ROOF RUNOFF ADJACENT TO RAIN GARDEN

1"=1'-0"



PART 1 - GENERAL

1.1 QUALITY ASSURANCE

- A. Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- B. Soil Analysis: For each un-amended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of the soil.

1. Test soil components of Planting Soils Type B, C, final in-place soils.

2. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.

3. Test shall include mechanical analysis of sand, silt and clay components.

4. The soil-testing laboratory shall oversee soil sampling; with depth, location, and number of samples to be taken per instructions from Architect. Required tests per each type of vegetative area:

a. Lawn: 1 set per acre

b. Native Prairies and ornamental grasses: 1 set per acre, min. 1 set per contiguous native prairie or ornamental grass area.

c. Restored soils in forested areas: 1 set per acre.

d. Restored soils in construction staging and materials storage areas: 1 set per acre

e. Stormwater Control Measures (SCMs): 2 sets per SCM

5. Soil tests shall include the following information:

a. Organic matter: Acceptable test methods for determining soil organic matter include the most current version of ASTM D2974 Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils and TMECC 05.07A Loss-On-Ignition Organic Matter Method. Tests shall indicate no Sphagnum peat is present and include percent organic matter..

b. Infiltration (field test only): Achieve infiltration rates (inches or centimeters per hour) or saturated hydraulic conductivity (millimeters per second) comparable to the site’s reference soils and appropriate for vegetation and program needs.

c. Soil chemical characteristics: Restore appropriate soil chemical characteristics for plant growth. The minimum basic profile that must be tested includes:

• pH

• Soluble salts (electrical conductivity)

• Cation exchange capacity (CEC)

• Extractable phosphorus

• Potassium

• Calcium

• Magnesium

d. Percentage of sand, silt and clay.

e. Stated recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.

f. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

1.2 PROJECT CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.  
Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

| Grass Type          | Fall Season              | Spring Season     |
|---------------------|--------------------------|-------------------|
| Cool season grasses | September 15-December 15 |                   |
| Warm season grasses |                          | April 15-June 15  |
| Native Prairies     |                          | April 15 – May 15 |

PART 2 - PRODUCTS

2.1 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:

1. Provide lime in form of ground dolomitic limestone or calcitic limestone depending on soil test.

2.2 ORGANIC SOIL AMENDMENTS

TURF AND GRASSES

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TURF AND GRASSES

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- A. Soil Conditioner: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1/2-inch sieve; soluble salt content of 5 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
  - 1. Organic Matter Content: 70 percent of dry weight.
  - 2. Sources: Agricultural, bark, biosolids; municipal compost; or source-separated or compostable mixed solid waste.
    - a. Free of toxic materials to plant growth
    - b. Free of weed seeds.

2.3 FERTILIZERS

- A. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- B. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
  - 1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.4 PLANTING SOILS

- A. Planting Soil Type B: Existing [found on site], native surface topsoil formed under natural conditions with the duff layer retained during excavation process and stockpiled on-site. Verify suitability of native surface topsoil to produce viable planting soil. Clean soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth by mechanical screening.
  - 1. Screen native material to remove extraneous materials
  - 2. Supplement with approved Planting Soil Type C when quantities are insufficient.
  - 3. Mix existing, native surface topsoil with the following soil amendments and fertilizers in the following quantities to produce planting soil:
    - a. Ratio of soil conditioner to Topsoil by Volume:
      - 1) 1:20 within top layer of topsoil
      - 2) 1:30 min. within scarified subsoil below to 12” depth
    - b. Weight of Slow-Release Fertilizer as per soil test.
    - c. Weight of dolomitic limestone as per soil test.
- B. Planting Soil Type C: Imported sandy loam topsoil formed under natural conditions blended with organic matter. Verify suitability of native surface topsoil to produce viable planting soil. Clean soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

- 1. Ratio of soil conditioner to Topsoil by Volume:
  - a. 1:20 within top layer of topsoil
  - b. 1:30 min. within scarified subsoil below to 12” depth
- 2. Weight of Slow-Release Fertilizer as per soil test
- 3. Weight of dolomitic limestone as per soil test.

2.5 SEED STABILIZATION

- A. Products for seeded slopes 4:1 or greater: 100% free of plastic or other non biodegradable materials, seed free, , available products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. American Excelsior Company, Curlex NetFree  
<http://www.americanexcelsior.com/erosioncontrol/products/netfree.php>
  - 2. Granite Environmental, Coconut Blanket C4000BD  
(<http://www.tdpltd.com/netlon-products/netpave-50.html>)
  - 3. Tensar BioNet  
(<http://www.nagreen.com/erosion-control-products/bionet-ecbs.php>)

2.6 MULCHES

- A. General: The Contractor shall select the mulching products that best suit the grass seed selected. Choose from the following mulches:
  - 1. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
  - 2. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- B. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

2.7 PESTICIDES

- A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

PART 3 - EXECUTION



- 3.1CONTROL OF INVASIVE SPECIES:

A. Where grading is taking place in a lawn or native prairie, applications of herbicides and pesticides to control undesirable species before disturbance should be avoided.
- 3.2SOIL PREPARATION:

A. Native Prairies: In the fall of the year prior to planting, soil testing shall be performed, and if the soil pH is below 5.5, limestone shall be applied at a rate that brings it above a pH of 5.5. The seeding area shall be disked to level prior to using a seed drill for planting. If disked in the fall, a winter cover crop of 35lbs/ac each of winter wheat and oats shall be broadcast.
- 3.3SEEDING (Seed drill option)

A. Native Prairie Seeding:

1. Native warm season grass/forb seed shall be planted using a seed drill.

2. Seed rate: (4-6 lbs/ac).

3. Depth: ¼ inch.

4. Sow seeds in a more uniform, and reliable pattern.

5. Seed drills must be calibrated before sowing is attempted, to ensure that the proper seeding rate per acre is achieved.

6. Annual nurse/cover crop seed should be added to the nwsg/f mix for erosion and sediment control purposes, per the following planting times:

a. August 15-March 15: 30 lbs/ac Annual grain rye March 16-August 14: 30 lbs/ac German millet

7. Weed-free straw mulch should be applied to all seeded areas at a rate of 2,000 lbs/ac.

8. If problematic broadleaf weeds pose a threat to the successful growth of native warm season grasses, the pre- emergent herbicide imazapic (brand name Plateau®) shall be used in control, at the beginning of the first growing season.
- 3.4SEEDING (Broadcast Option)

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph . Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

1. Do not use wet seed or seed that is moldy or otherwise damaged.

B. Removal of Existing Vegetation (only required for non-disturbed areas):

1. Herbicide:

a. The area to be seeded should be treated with (3) separate applications of an approved glyphosate herbicide (recommended herbicide to be an aquatic approved herbicide such as Rodeo® or Accord®, use of RoundUp products is not allowed).

b. Spraying shall begin in later winter when growth is approximately 6” high.
- c. After first cold season application, perform (2) follow-up warm season (April – May) applications no less than (2) weeks apart. Wait at least (2) weeks after 3<sup>rd</sup> herbicide application to plant seed.

d. All existing plant material such as stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, building debris, and other extraneous material.

C. Sow seed at the following rates

|   |  |
|---|--|
| Native Meadow Seed Mix  | 15 lbs per acre<br><br>40 lbs per acre for slopes greater than 3:1 |
| Seeded Lovegrass Meadow   | 15 lbs per acre<br><br>40 lbs per acre for slopes greater than 3:1 |
| Cover Crop (to be seed at the same time as the meadow seed mixes) | 30 lbs per acre  |

D. Brush seed into top 1/16 inch of soil, roll lightly, and water with fine spray.

E. Protect seeded areas from hot, dry weather or drying winds by applying compost mulch within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of 3/16 inch, and roll surface smooth.

F. Broadcast seed with 100 lbs/acre of lightweight dampened kitty litter or other approved inert material such as saw dust to act as a seed carrier and visually show seed coverage.

G. Water newly planted areas and keep moist until meadow is established.

3.5NATIVE PRAIRIE MAINTENANCE

A. Maintain and establish native prairies by watering, weeding, mowing, trimming, replanting, and performing other operations as required to establish a healthy, viable native prairie. Roll, regrade, and replant bare or eroded areas and remulch. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and native prairies damaged or lost in areas of subsidence.

2. Apply treatments as required to keep native prairies and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
- TURF AND GRASSES
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- TURF AND GRASSES
- 329200 - 6

## UPDATE 041823 Plans of HGC Bee City Subcommittee for National Pollinator Week 2023

Pollinator Week dates are June 19-25, although some activities will fall outside the designated week.

The HGC Bee City Committee plans and carries out activities throughout the year, but especially during this special week. These are some events and activities that are confirmed so far:

- Garden Visits: June 6 free Open Garden visits at two locations in Poplar Ridge will be held 10-am-1pm. One garden has mainly flowers (Penny Rand) and one has mainly vegetables (Michael Barritt).
- Publicity: Last Friday April 28 and May 6 Spring Garden Tour – We will distribute publicity for Pollinator Week In addition, we will post social media listings and submit Word on the Street notices in News of Orange.
- Seeds: Free Wildflower of the Year seed distribution at the Orange County Library, Gro Smart, Margaret Lane Gallery, Carlisle & Linney Vintage Jewelry and at the Spring Garden Tour ticket sale tables on May 5 and 6. The seed packets are furnished by the NC Botanical Gardens.
- Education and awareness:
  - Article about pollinator gardening will be submitted to News of Orange
  - We will ask the Town of Hillsborough to erect the Pollinator Week sign on S. Churton St.
  - We will ask Governor Cooper and Mayor Weave to declare June 19-25 as Pollinator Week
- The Chamber of Commerce has already distributed two notices to encourage merchants and organizations to observe Pollinator Week with product promotions, displays, window decorations, etc. We will ask them to distribute at least three more notices.

These are activities that may happen, depending on getting more volunteers to assist:

- Conduct a reimagined Bee Photo Hunt in cooperation with downtown merchants; businesses and organizations will volunteer to become a “Bee Station” by posting numbered cartoon bee signs in business windows; public can take certain # of photos to win pollinator plants and donated prizes. We have four Bee Stations so far. We need about 20 total locations to make the game work for participants.
- Late summer/early fall: Organize a Pollinator Themed Family Craft Event at a local park (date TBA) – volunteers will interact with adults and children to make seed bombs or winter sowing mini-greenhouses and create pollinator art projects, distribute information about native plants and pollinator gardening, answer questions.

Contact Chair Sarah Meadows, [smeadow100@gmail.com](mailto:smeadow100@gmail.com).